

# Analytical Instrumentation: Issues and Answers

How to “obtain” Expensive Lab Instruments

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Dr. Phil Edwards  
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# Agenda

- What is an expensive Instrument?
- Total cost of ownership
- What are the most important criteria?
- Why so difficult ?
- Why justified or not?
- Do's/Don'ts
- Funding an expensive instrument
- Alternatives to buying
- Conclusions

# What is an expensive Instrument

- Above \$150,000
  - Nuclear Magnetic Resonance Spectrometer(NMR)
  - Raman Spectrometer
  - Scanning Electron Microscope(SEM)
  - Atomic Force Microscope(AFM)

# Total Cost of Ownership

- Depreciation
- Service contract – service contracts for high end analytical instruments are significantly more expensive
- Staff training
- Disposables
- Down time may be higher
- Facility changes that may be required to house and operate the instrument
  - More lab space
  - Electrical service upgrades

# What are the most important criteria for approval

- Prior demonstration of value to clients and business
- Utilization rate
- Timeliness to support clients current projects
- Timeliness to support clients future projects(harder to define but may be more important)
- Clients stepping up and supporting the purchase.

# Why so difficult?

- \$'s,\$'s,\$'s is the big one in an environment of doing more with less
- May be needed to support a low margin business or low priority project(much easier for a high margin /high priority area)
- May not be required on an ongoing basis
- The added depreciation may significantly impact your cost structure and charge-out rate

# Why justified?

- Faster turnaround time/better quality(?) on established methods
- More opportunity to interact with the in-house analyst during the analysis
- More opportunity to use the instrument for new analysis where a method isn't in place
- New unpredicted capability that brings added insight to an R&D program, better understanding of a process, satisfies a new environmental regulation

# Why not justified?

- May not be required on an ongoing basis
- Work can be outsourced at a cheaper cost per analysis
- More control on capital spending than on operating spending
- Requires expert/specialised support

# Do's

- Benchmark the experience of peers (through ALMA) with vendors and instruments
  - Which instruments are working well for them
  - What is their service experience
- Utilize your Purchasing department to do the price negotiation – it's their job and they are skilled at it.
  - Include length and level of service contract and training as a part of the price negotiation.
  - Get their help in re-selling your old instrument.

# Don'ts

- Don't buy on instrument cost alone
  - Consider total cost of ownership including service, reliability
- Don't purchase less capability than you need or more
  - Consider an instrument that is expandable later
- Don't buy the first off the assembly line
- Don't buy one of the last instruments before a model change (you may end up with a lower service support life)
- Don't limit your search to one vendor
- Don't let the analytical chemist do the price negotiation with the vendor – they can get too close to the vendor and the vendor knows they are the preferred choice.

# Funding an Expensive Instrument

- Increase your charge-out rate to cover the depreciation
- Seek a one time capital fund from upper management
- Get your clients to share the cost

# Alternatives to Buying

- Outsource capability
  - An easy way to quantitatively justify purchase later
- Lease
  - Short term lease
  - Lease to buy
- Buy used

Once continued need is demonstrated the justification for purchase is stronger.

# Conclusions

- Obtaining expensive lab instruments involves:
  - Support and help from people outside of the “Owner” function
  - Requires multiple considerations which must be treated together, may be inherently non-quantifiable and hence has a degree of uncertainty

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